

Conf: 60%, Supp: 5%

Data-mining Task basic parameters

Name: AC Test - Task ID: 1

Comment: -

Taskgroup: Default group of tasks

Task type: Ac4ft-Miner Data matrix: titanic3 Edit

ANTECEDENT STABLE PART		QUANTIFIERS		SUCCEDENT STABLE PART	
Default Partial Cedent	Con. 1 - 5	Type	Rel. Value Units	Default Partial Cedent	Con. 0 - 5
» Age (subset), 1 - 1	B. pos	a (BASE) Before	>= 5.00 %All		
		a (BASE) After	>= 5.00 %All		
		PIM Before	>= 0.60 Abs		
		PIM After	>= 0.60 Abs		
Total length: 1		Generation information		Total length: 0	
		Status: Solved, 2 run(s)			
		Mode: Standard			
(1) ANTECEDENT VARIABLE PART		CONDITION		(2) SUCCEDENT VARIABLE PART	
Default Partial Cedent	Con. 1 - 3	Default Partial Cedent	Con. 0 - 5	Default Partial Cedent	Con. 0 - 5
» Embarked (subset), 1 - 1	B. pos			» Survived (0 -> 1)	B. pos
» Fare (subset), 1 - 1	B. pos				
» Pclass (subset), 1 - 1	B. pos				
Total length: 0 - 5 {1 - 3}		Total length: 0		Total length: 0 - 5 {0 - 1}	

Actual group of hypotheses: All hypotheses

Hypotheses in group: 1 Shown hypotheses: 1 Highlighted: 0 Delete hypotheses

Nr.	Id	Df-Conf	B-Conf	A-Conf	Hypothesis
1	1	0.218	0.844	0.626	Age(<32.10002;48.06668): (Pclass(3) -> Pclass(1)) >=< (empty): (Survived(0) -> Survived(1))

LispMiner returns 1 result.

```
desired_state = DesiredState(desired_classes = ["1.0"])
decisions = Decisions()
decisions.read_csv("data/titanic.csv", sep="\t", lineterminator='\r')
antecedents = ["Age", "Embarked", "Fare", "Pclass", "Sex"]
consequent = "Survived"
decisions.prepare_data_fim(antecedents, consequent)
decisions.fit_fim_apriori(conf=60, support=5)
```

The Python app returns 3 results, (2 of them contain nan).

```
for arule in arules.action_rules_list:
    print(arule)

([('Age', '<16.13336;32.10002)'), [('Embarked', 'nan', 'S')], [('Survived', '0.0', '1.0')])
([('Age', '<32.10002;48.06668)'), [('Pclass', 'nan', '1.0')], [('Survived', '0.0', '1.0')])
([('Age', '<32.10002;48.06668)'), [('Pclass', '3.0', '1.0')], [('Survived', '0.0', '1.0')])
```

Conf: 55%, Supp: 4%

Data-mining Task basic parameters

Name: AC Test - Task ID: 1

Comment: -

Taskgroup: Default group of tasks

Tasktype: Ac4ft-Miner Data matrix: titanic3 Edit

ANTECEDENT STABLE PART		QUANTIFIERS		SUCCEDENT STABLE PART	
Default Partial Cedent	Con. 1 - 5	Type	Rel. Value Units	Default Partial Cedent	Con. 0 - 5
» Age (subset), 1 - 1	B. pos	a (BASE) Before	>= 4.00 %All		
		a (BASE) After	>= 4.00 %All		
		PIM Before	>= 0.55 Abs		
		PIM After	>= 0.55 Abs		
Total length: 1		Generation information		Total length: 0	
		Status: Solved, 3 run(s)			
		Mode: Standard			
(1) ANTECEDENT VARIABLE PART		CONDITION		(2) SUCCEDENT VARIABLE PART	
Default Partial Cedent	Con. 1 - 3	Default Partial Cedent	Con. 0 - 5	Default Partial Cedent	Con. 0 - 5
» Embarked (subset), 1 - 1	B. pos			» Survived (0 -> 1)	B. pos
» Fare (subset), 1 - 1	B. pos				
» Pclass (subset), 1 - 1	B. pos				
Total length: 0 - 5 {1 - 3}		Total length: 0		Total length: 0 - 5 {0 - 1}	

Actual group of hypotheses: All hypotheses

Hypotheses in group: 7 Shown hypotheses: 7 Highlighted: 0 Delete hypotheses

Nr.	Id	Df-Conf	B-Conf	A-Conf	Hypothesis
1	7	0.218	0.844	0.626	Age(<32.10002;48.06668): (Pclass(3) -> Pclass(7)) >>< (empty): (Survived(0) -> Survived(7))
2	6	0.139	0.806	0.667	Age(<16.13336;32.10002): (Fare(lower) -> Fare(very high)) >>< (empty): (Survived(0) -> Survived(7))
3	1	0.060	0.671	0.611	Age(<16.13336;32.10002): (Embarked(S) -> Embarked(C)) >>< (empty): (Survived(0) -> Survived(7))
4	2	0.026	0.738	0.713	Age(<16.13336;32.10002): (Pclass(3) -> Pclass(7)) >>< (empty): (Survived(0) -> Survived(7))
5	5	0.025	0.692	0.667	Age(<16.13336;32.10002): (Fare(very low) -> Fare(very high)) >>< (empty): (Survived(0) -> Survived(7))
6	3	-0.018	0.649	0.667	Age(<16.13336;32.10002): (Fare(avg) -> Fare(very high)) >>< (empty): (Survived(0) -> Survived(7))
7	4	-0.123	0.590	0.713	Age(<16.13336;32.10002): (Pclass(2) -> Pclass(7)) >>< (empty): (Survived(0) -> Survived(7))

LispMiner returns 7 results.

```
desired_state = DesiredState(desired_classes = ["1.0"])
decisions = Decisions()
decisions.read_csv("data/titanic.csv", sep="\t", lineterminator='\n')
antecedents = ["Age", "Embarked", "Fare", "Pclass", "Sex"]
consequent = "Survived"
decisions.prepare_data_fim(antecedents, consequent)
decisions.fit_fim_apriori(conf=55, support=4)

[(['Age', '<16.13336;32.10002']), ([('Pclass', 'nan', '1.0')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Embarked', 'S', 'C')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Fare', 'nan', 'very high')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Embarked', 'nan', 'S')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Embarked', 'nan', 'C')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Pclass', '3.0', '1.0')), [(['Survived', '0.0', '1.0'])]
[(['Age', '<16.13336;32.10002']), ([('Pclass', '2.0', '1.0')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<16.13336;32.10002']), ([('Fare', 'avg', 'very high')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<16.13336;32.10002']), ([('Fare', 'very low', 'very high')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<16.13336;32.10002']), ([('Fare', 'lower', 'very high')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<32.10002;48.06668']), ([('Pclass', 'nan', '1.0')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<32.10002;48.06668']), ([('Fare', 'nan', 'very high')), [(['Survived', '0.0', '1.0'))]
[(['Age', '<32.10002;48.06668']), ([('Pclass', '3.0', '1.0')), [(['Survived', '0.0', '1.0'))]
```

The Python app returns 13 results, (6 of them contain nan).

Conf: 55%, Supp: 3%

Data-mining Task basic parameters
Name: AC Test - Task
Comment: -
Taskgroup: Default group of tasks
Task type: Ac4ft-Miner
Data matrix: titanic3
ID: 1
Edit

ANTECEDENT STABLE PART
Default Partial Cedent
» Age (subset), 1 - 1
Con, 1 - 5
B. pos

QUANTIFIERS
Type Rel. Value Units
a (BASE) Before >= 3.00 %All
a (BASE) After >= 3.00 %All
PIM Before >= 0.55 Abs
PIM After >= 0.55 Abs
Generation information
Status: Not generated, 3 run(s)
Mode: -
Total length: 1

SUCCEDENT STABLE PART
Default Partial Cedent
Con, 0 - 5
Total length: 0

(1) ANTECEDENT VARIABLE PART
Default Partial Cedent
» Embarked (subset), 1 - 1
» Fare (subset), 1 - 1
» Pclass (subset), 1 - 1
Con, 1 - 3
B. pos
B. pos
B. pos
Total length: 0 - 5 {1 - 3}

CONDITION
Default Partial Cedent
Con, 0 - 5
Total length: 0

(2) SUCCEDENT VARIABLE PART
Default Partial Cedent
» Survived (0 -> 1)
Con, 0 - 5
B. pos
Total length: 0 - 5 {0 - 1}

Actual group of hypotheses: All hypotheses
Hypotheses in group: 12
Shown hypotheses: 12
Highlighted: 0
Delete hypotheses

Nr.	Id	Df-Conf	B-Conf	A-Conf	Hypothesis
1	10	0.218	0.844	0.626	Age(<32.10002;48.06668): (Pclass(3) -> Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
2	6	0.139	0.806	0.667	Age(<16.13336;32.10002): (Fare(lower) -> Fare(very high)) >+< (empty): (Survived(0) -> Survived(1))
3	7	0.084	0.806	0.722	Age(<16.13336;32.10002): (Fare(lower) & Pclass(3) -> Fare(very high) & Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
4	1	0.060	0.671	0.611	Age(<16.13336;32.10002): (Embarked(S) -> Embarked(C)) >+< (empty): (Survived(0) -> Survived(1))
5	2	0.026	0.738	0.713	Age(<16.13336;32.10002): (Pclass(3) -> Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
6	5	0.025	0.692	0.667	Age(<16.13336;32.10002): (Fare(very low) -> Fare(very high)) >+< (empty): (Survived(0) -> Survived(1))
7	11	-0.005	0.621	0.626	Age(<32.10002;48.06668): (Pclass(2) -> Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
8	3	-0.018	0.649	0.667	Age(<16.13336;32.10002): (Fare(avg) -> Fare(very high)) >+< (empty): (Survived(0) -> Survived(1))
9	8	-0.031	0.692	0.722	Age(<16.13336;32.10002): (Fare(very low) & Pclass(3) -> Fare(very high) & Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
10	9	-0.082	0.640	0.722	Age(<16.13336;32.10002): (Fare(avg) & Pclass(2) -> Fare(very high) & Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))
11	12	-0.104	0.603	0.707	Age(<32.10002;48.06668): (Fare(higher) -> Fare(very high)) >+< (empty): (Survived(0) -> Survived(1))
12	4	-0.123	0.590	0.713	Age(<16.13336;32.10002): (Pclass(2) -> Pclass(1)) >+< (empty): (Survived(0) -> Survived(1))

LispMiner returns 12 results.

```
desired_state = DesiredState(desired_classes = ["1.0"])
decisions = Decisions()
decisions.read_csv("data/titanic.csv", sep="\t", lineterminator='\n')
antecedents = ["Age", "Embarked", "Fare", "Pclass"]
consequent = "Survived"
decisions.prepare_data_fim(antecedents, consequent)
decisions.fit_fim_apriori(conf=55, support=3)
decisions.generate_decision_table()
```

The Python app returns 28 results, (16 of them contain nan).

```
for arule in arules.action_rules_list:
    print(arule)
```

```
[('Age', '<16.13336;32.10002)'), (('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Embarked', 'S', 'C'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'nan', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'nan', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Embarked', 'nan', 'C'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'nan', 'very high'), ('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Pclass', '2.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'avg', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'avg', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'nan', 'very high'), ('Pclass', '2.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'avg', 'very high'), ('Pclass', '2.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'very low', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'lower', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'very low', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'very low', 'very high'), ('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'lower', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<16.13336;32.10002)'), (('Fare', 'lower', 'very high'), ('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'nan', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'nan', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'nan', 'very high'), ('Pclass', '3.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Pclass', '2.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'nan', 'very high'), ('Pclass', '2.0', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'higher', 'very high'), [('Survived', '0.0', '1.0')])
[('Age', '<32.10002;48.06668)'), (('Fare', 'higher', 'very high'), ('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
[('Age', '<48.06668;64.03334)'), (('Pclass', 'nan', '1.0'), [('Survived', '0.0', '1.0')])
```